



DRINKING WATER AND RADIOLOGICAL PROTECTION DIVISION *POLICY AND PROCEDURES*

NUMBER:	DWRP-03-013	
SUBJECT:	NEW SYSTEMS CAPACITY ASSESSMENT FOR COMMUNITY PUBLIC WATER SYSTEMS	
EFFECTIVE DATE:	OCTOBER 1, 1999	PAGE: 1 OF 9

ISSUE:

As a result of the 1996 amendments to the federal Safe Drinking Water Act, the State of Michigan must implement a capacity development program. One of the elements of this program is to ensure that all new community public water systems commencing operation after October 1, 1999 demonstrate technical, financial, and managerial capacity with respect to each national primary drinking water regulation. Failure to do so on the part of the State of Michigan will result in the U.S. Environmental Protection Agency withholding 20% of the Drinking Water Revolving Loan Fund capitalization grant.

AUTHORITY:

Excerpts from the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399):

"325.1002 Definitions.

Sec. 2. As used in this act:

(b) "Capacity assessment" means an evaluation of the technical, financial, and managerial capability of a community supply or nontransient noncommunity water supply to comply and maintain compliance with all requirements of this act and the rules promulgated under this act.

(n) "Plans and specifications" means drawings, data and a true description or representation of an entire waterworks system or parts of the system as it exists or is to be constructed, and a statement on how a waterworks system is to be operated.

"325.1004 Filing plans and specifications of waterworks system; general plan of waterworks system; evaluation of proposed system; return or rejection of plans and specifications; plans and specifications for improvements; permit for construction; violation; permit as condition to expenditures.

Sec. 4. (2) Upon receipt of the plans and specifications for a proposed waterworks system, the department shall evaluate the adequacy of the proposed system to protect the public health by supplying water meeting the state drinking water standards. The department shall also conduct a capacity assessment for a proposed community supply or nontransient noncommunity water supply and determine if the system has the technical, financial, and managerial capacity to meet all requirements of this act and the rules promulgated under this act, on the date of commencement of operations. If upon evaluation the department determines the plans and specifications to be inadequate or the capacity assessment shows the system to be inadequate; the department may return the plans and specifications to the applicant and require additions or modifications as may be appropriate. The department may reject plans

**DRINKING WATER AND RADIOLOGICAL PROTECTION DIVISION
POLICY AND PROCEDURES**

NUMBER: DWRP-03-013

SUBJECT: NEW SYSTEMS CAPACITY ASSESSMENT FOR COMMUNITY PUBLIC WATER SYSTEMS

EFFECTIVE DATE: OCTOBER 1, 1999

PAGE: 2 of 9

and specifications for a waterworks system which it determines will not satisfactorily provide for the protection of the public health. The department may deny a permit for construction of a proposed community supply or a nontransient noncommunity water supply if the capacity assessment shows that the proposed system does not have adequate technical, financial, or managerial capacity to meet the requirements of this act and the rules promulgated under this act.

(4) The department may deny a permit for construction of a waterworks system or an alteration, addition, or improvement to a waterworks system if the most recent capacity assessment shows that the waterworks system does not have adequate technical, financial, or managerial capacity to meet the requirements of this act and the rules promulgated under this act, and the deficiencies identified in that capacity assessment remain uncorrected, unless the proposed construction will remedy the deficiencies.

“325.1008 Design and operation standards of public water supplies; considerations.

Sec. 8. The department shall give due consideration to the size, type, location, and other conditions at public water supplies for the purpose of specifying design and operation standards, and for the purpose of establishing criteria for capacity assessments.

“325.1015 Protection of public health; notice to supplier of water; inspection of waterworks system; order; public hearing; emergency order; action limiting water use.

Sec. 15. (2) The department shall inspect a waterworks system or a part of a waterworks system, and the manner of operation of the system or part. If upon inspection the department determines the waterworks system to be inadequate or so operated as to not adequately protect the public health, the department may order the supplier of water to make alterations in the waterworks system or its method of operation as may be required or considered advisable by the department to assure the public water supply is adequate, healthful, and in conformance with state drinking water standards.”

Following this policy is a compilation of all existing statutes, rules, and policies that establish minimum requirements, describe acceptable practices, and/or provide guidance that may be used in developing and assembling the information necessary for the Department of Environmental Quality (DEQ) to perform a **Capacity Assessment** for new community public water systems. It will be the responsibility of the applicant seeking a Construction Permit for a proposed community public water system to compile the information necessary for staff to perform a **Capacity Assessment**. This information will hereafter be referred to as a **Capacity Plan**. The **Capacity Assessment** is a process that may begin with a formal request for a well site inspection or submittal of plans and specifications for a new system, and concludes with a **Final Inspection** and written approval to commence operation.

**DRINKING WATER AND RADIOLOGICAL PROTECTION DIVISION
POLICY AND PROCEDURES**

NUMBER: DWRP-03-013

SUBJECT: NEW SYSTEMS CAPACITY ASSESSMENT FOR COMMUNITY PUBLIC WATER SYSTEMS

EFFECTIVE DATE: OCTOBER 1, 1999

PAGE: 3 of 9

POLICY:

Upon receipt of a request for a well site inspection or submittal of plans and specifications for a proposed community public water supply, the Drinking Water and Radiological Protection Division (DWRPD) staff will initiate a **Capacity Assessment**. The **Capacity Assessment** shall determine if the proposed system will have the technical, financial, and managerial capacity to meet all the requirements of 1976 PA 399, as amended. The assessment will be based upon information contained in a **Capacity Plan** submitted by or on behalf of the supply. The information contained in a **Capacity Plan** must either be included with plans and specifications submitted for a Construction Permit or provided prior to a **Final Inspection**. As a minimum, that information will consist of a written description of the water system design that includes the following:

For Technical Capacity:

Details of the proposed public water supply system as required by R 325.11303(1), "engineering report or basis of design," that **shall** include, **where applicable**:

1. A project summary that includes an evaluation of the alternatives considered and the reasons for the selected alternative. The summary shall include the population to be served, the proposed service area, and the anticipated growth for 5 and 10 years.
2. Technical Plans and Specifications, describing the water supply facilities to be constructed, including the basis of design for the selected alternative and the materials, methods, and procedures to be used in construction.
3. Design calculations where appropriate, including:
 - a. Estimated average day, maximum day, peak hour and for hydropneumatic systems, momentary or instantaneous system demands;
 - b. Firm pumping and treatment capacities;
 - c. Sizing of chemical feed systems and proposed application rates;
 - d. Treatment loading rates and disinfectant contact times assuring adequate disinfection;
 - e. Storage volumes; and
 - f. System flow and pressure requirements and fire demands if provided.
4. Chemical analyses of the source from a certified laboratory.
5. A site plan identifying the proposed location of the water supply system and its components, including wells and their isolation distances, surface water intakes, treatment facilities, storage tanks, pumping facilities, etc.
6. For groundwater sources:
 - a. A study of hydrogeological conditions for determination of the isolation requirements, identification of aquifer characteristics, availability of water at that site, vulnerability to potential sources of contamination, and proposed well design.
 - b. Ownership or acceptable control of required isolation areas for proposed wells.
 - c. Well construction details, including a well log, grouting details, relative elevations with respect to the 100-year flood elevation or highest recorded flood elevation, whichever is higher, wellhouse plans, and the following well appurtenances:
 - i. Meters,
 - ii. Pump-to-waste piping,
 - iii. A means to measure drawdown,
 - iv. Sampling tap,

**DRINKING WATER AND RADIOLOGICAL PROTECTION DIVISION
POLICY AND PROCEDURES**

NUMBER: DWRP-03-013

SUBJECT: NEW SYSTEMS CAPACITY ASSESSMENT FOR COMMUNITY PUBLIC WATER SYSTEMS

EFFECTIVE DATE: OCTOBER 1, 1999

PAGE: 4 of 9

- v. Emergency treatment facilities, and
 - vi. Casing vents and air/vacuum relief valves.
- 7. For surface water sources:
 - a. A sanitary survey of the proposed surface water source, including the capacity available, the normal water quality, significant variations in quality and suitability for any proposed treatment.
 - b. An assessment of vulnerability to potential sources of contamination.
- 8. An analysis of system reliability to continuously supply finished water to the distribution system during an interruption in normal power service.
- 9. If water is to be purchased from another system, documentation of the purchase agreement or contract.

A professional engineer who is registered in the State of Michigan shall prepare the Technical Capacity information portion of a **Capacity Plan**.

For Financial Capacity:

Details of the proposed financial system, that **shall** include:

- 1. An analysis comparing the development of the proposed, new public water supply to consolidating with an existing, reasonably available public water supply.
- 2. An acknowledgement of the annual water supply fee imposed by the department, to be billed at the beginning of the next fiscal year after the new system is serving 25 or more people.
- 3. An annual budget plan for a minimum of 5 years that may include the following:
 - a. A summary of expected annual revenue sources, including each source of income (rates, fee mechanism, etc.);
 - b. An accounting of anticipated and planned expenses, such as:
 - i. Operation and maintenance costs (salaries; benefits; utilities; chemicals; monitoring; laboratory; supplies; taxes; extensions; and replacement, transportation, and contractual services, etc.);
 - ii. Administrative costs (salaries, benefits, supplies, insurance, legal, engineering, reporting, debt service and debt retirement, accounting, etc.);
 - iii. Capital improvement costs; and/or
 - iv. A description of the method of payment for the construction, operation, and maintenance of the system;
 - c. The accumulation of reserves for capital replacement and/or expansion; and/or
 - d. Any other plan for capital replacement.
 - e. Documentation that a lending institution/agency has approved an application for funding construction of the proposed system, based on a determination that the applicant has the ability to repay the loan while maintaining the investment.

For Managerial Capacity:

Details of the proposed system management, that **shall** include, **where applicable**

- 1. A description of the ownership and its organization, including:
 - a. Name of the owner of the public water supply system;
 - b. An organizational structure showing the chain of command;

**DRINKING WATER AND RADIOLOGICAL PROTECTION DIVISION
POLICY AND PROCEDURES**

NUMBER: DWRP-03-013

SUBJECT: NEW SYSTEMS CAPACITY ASSESSMENT FOR COMMUNITY PUBLIC WATER SYSTEMS

EFFECTIVE DATE: OCTOBER 1, 1999

PAGE: 5 of 9

- c. Designation of the operator-in-charge for both the treatment and distribution systems, and the level of certification held by the operator(s);
 - d. The job responsibilities for each position having management and operational duties associated with the public water supply system, and the level of certification that may be required for each of these positions; and
 - e. The legal basis for providing for the formation of the public water supply system.
2. A commitment to complete a contingency plan to be used in an emergency that will include:
 - a. An inventory of necessary standby personnel, equipment, chemicals, and other materials readily available for correction of problems;
 - b. A plan for emergency treatment in the event of contamination or the potential for contamination of the drinking water;
 - c. A plan for alternate sources of water in an emergency (hailed water, bottled water, interconnections with adjacent supplies, etc.);
 - d. Appropriate means for public notification of customers or users affected by an emergency;
 - e. A listing of critical customers for whom a continuous supply of safe drinking water is most urgent;
 - f. A copy of the general plan of the public water supply system; and
 - g. A method of notifying the DEQ and acknowledgement of the reporting requirements in response to an emergency.
3. A proposed sample site plan describing the bacteriological monitoring program, identifying the routine and repeat sample locations, the sampling frequency, the sampling procedures, the notification protocol for MCL violations, etc.
4. An acknowledgement of the requirements and associated costs for all chemical monitoring established by the DEQ for the proposed public water supply.
5. A proposed cross connection control program and ordinance, as described in the "*Cross Connection Rules Manual*." In the case of a privately-owned public water supply system, a cross connection control policy that accepts responsibility to carry out and abide by the cross connection control requirements.
6. A copy of standard specifications establishing standards for water main, hydrants, valves, etc.
7. A plan for providing legal doctrines, including policies, ordinances, rules, resolutions, or practices that define, at a minimum:
 - a. Budget development and rate structure, including a metering policy;
 - b. Conditions required for providing water service for existing and new connections;
 - c. The support for continuing training of operators and managers of the water system to keep current with regulatory requirements and maintain certification;
 - d. Responsibilities of the public water supply to the consumer;
 - e. Responsibilities of the consumer to the public water system; and
 - f. A shut-off policy for nonpayment.
8. For privately-owned public water supply systems, it will also be necessary to comply with the private ownership requirements established in Part 17 of the administrative rules promulgated under Act 399, which include, but are not limited to:
 - a. Obtaining a resolution from the local governmental unit indicating their refusal to own or operate the proposed public water supply;

**DRINKING WATER AND RADIOLOGICAL PROTECTION DIVISION
POLICY AND PROCEDURES**

NUMBER: DWRP-03-013

SUBJECT: NEW SYSTEMS CAPACITY ASSESSMENT FOR COMMUNITY PUBLIC WATER SYSTEMS

EFFECTIVE DATE: OCTOBER 1, 1999

PAGE: 6 of 9

- b. Entering into a consent agreement stipulating the manner in which the proposed water supply system will be constructed, operated, and maintained;
- c. Providing documentation that a continuing, cash escrow fund has been established in an account that is only available to the DEQ for making emergency repairs or maintenance;
- d. Documenting that all easements have been obtained for any portion of the waterworks system which is not located in the public right-of-way, including the well isolation area;
- e. Agreeing to transfer ownership and operation of the entire public water supply to an appropriate governing body of a city, village, or township, or its designated public entity;
- f. Acknowledging that the owner will notify and receive approval from the department not less than 90 days prior to a proposed change in private ownership, and that the continuing cash escrow fund will be maintained by the new owner; and
- g. Demonstrating clear ownership of all the facilities necessary for operation of the system.

PROCEDURE:

Responsibility

Action

Applicant

1. **At least 60 days prior to initiating construction**, the applicant seeking a permit to construct a proposed community public water supply shall submit a **Capacity Plan**, including plans and specifications, to the appropriate DWRPD District Office. As a minimum, the **Capacity Plan** shall include sufficient information for a Construction Permit to be issued. However, certain financial and managerial capacity issues may be submitted prior to scheduling of a **Final Inspection**.

DWRPD District Office Staff

2. **Within 30 days of receiving the Capacity Plan**, the DWRPD District Office staff will review the submittal to determine if it provides the necessary information to issue a Construction Permit and initiate a **Capacity Assessment**.

DWRPD District Office Staff

3. If the submittal is administratively incomplete or unacceptable, the DWRPD District Office staff will notify the applicant of the modifications or additional information necessary to issue the Construction Permit and/or initiate **the Capacity Assessment**.

**DRINKING WATER AND RADIOLOGICAL PROTECTION DIVISION
POLICY AND PROCEDURES**

NUMBER: DWRP-03-013

SUBJECT: NEW SYSTEMS CAPACITY ASSESSMENT FOR COMMUNITY PUBLIC WATER SYSTEMS

EFFECTIVE DATE: OCTOBER 1, 1999

PAGE: 7 of 9

Responsibility

Action

DWRPD District Office Staff

4. If the submittal is administratively complete, the DWRPD District Office staff will review the plans and specifications, issue the Construction Permit, and initiate the **Capacity Assessment**.

DWRPD District Office Staff

5. When the plans and specifications are considered acceptable, **the DWRPD District Office staff will issue the Construction Permit within 30 days from receiving the last submittal from the applicant**, authorizing construction of the proposed water supply system.

DWRPD District Office Staff

6. If the **Capacity Assessment** and/or review of plans and specifications show the proposed system to be unacceptable or inadequate, the **DWRPD District Office staff will notify the applicant within 30 days and require additions or modifications as may be appropriate**. A Construction Permit shall not be issued until the DWRPD District Office staff has been satisfied.

Applicant

7. The applicant shall notify the DWRPD District Office 30 days prior to the date construction is to be completed.

DWRPD District Office Staff

8. A **Final Inspection** will then be scheduled prior to the commencement of operation of the waterworks system. The DWRPD District Office staff will schedule this inspection as soon as practical, to coincide as closely as possible with the completion of construction. The **Final Inspection** will be conducted on-site. The applicant shall arrange for the presence of appropriate officials, including the design engineer, the contractor responsible for construction, the certified operator, and any other representative having some responsibility for managing the proposed water system.

**DRINKING WATER AND RADIOLOGICAL PROTECTION DIVISION
POLICY AND PROCEDURES**

NUMBER: DWRP-03-013

SUBJECT: NEW SYSTEMS CAPACITY ASSESSMENT FOR COMMUNITY PUBLIC WATER SYSTEMS

EFFECTIVE DATE: OCTOBER 1, 1999

PAGE: 8 of 9

Responsibility

DWRPD District Office Staff

Action

9. As a result of the **Final Inspection**, the following items must be reviewed and approved by the DWRPD District Office staff performing the inspection:
 - a. The waterworks facilities, to determine if they have been constructed in accordance with the plans and specifications for which the Construction Permit was issued.
 - b. Any leases or easements necessary for operation and maintenance of the waterworks system have been obtained.
 - c. A written **Operations Plan** to include:
 - i. A plan for water quality monitoring, including a **Sampling Site Plan** in compliance with the Total Coliform Rule.
 - ii. A **Contingency Plan**, including response procedures for power outages, emergency disinfection, and water quality violations.
 - iii. Routine operation and maintenance procedures for pumps, motors, storage tanks, meters, valves, and hydrants, including procedures for water main repairs and system flushing.
 - iv. Standard specifications for the waterworks system components.
 - v. A **Cross Connection Control Program**.
 - vi. A plan for ongoing operator training.
 - vii. Customer complaint response procedures.
 - viii. Any other rules, ordinances, policies, etc., which cover operation of the water system.
 - d. An acceptable 5-year **Budget Plan** if not already submitted with the plans and specifications.

DRINKING WATER AND RADIOLOGICAL PROTECTION DIVISION
POLICY AND PROCEDURES

NUMBER: DWRP-03-013

SUBJECT: NEW SYSTEMS CAPACITY ASSESSMENT FOR COMMUNITY PUBLIC WATER SYSTEMS

EFFECTIVE DATE: OCTOBER 1, 1999

PAGE: 9 of 9

Responsibility

DWRPD District Office Staff

DWRPD District Office Staff

Action

10. If the DWRPD staff determines the proposed system has adequate technical, financial, and managerial capacity to comply with the requirements of Act 399, the DWRPD District Office staff shall grant approval to commence operation of the new community public water system within 30 days after the **Final Inspection** or after receiving the last submittal required from the applicant, whichever is later.
11. If the **Capacity Assessment** determines that the system is deficient or inadequate to protect the public health, the DWRPD District Office staff shall not grant approval to commence operation until appropriate corrections or additions are made and a satisfactory inspection has documented the modifications are acceptable. If the applicant places the system into operation without correcting these deficiencies, the DWRPD District Office staff shall initiate enforcement action under Act 399 and the supplier is subject to the penalties and provisions of Act 399.

APPROVED: _____

Flint C. Watt, P.E., Chief

Drinking Water and Radiological Protection Division

DATE: 10-1-99